



COAL MINING AND RECLAMATION PERMIT APPLICATION TO REVISE A PERMIT (ARP)

Issued To: AMERICAN ENERGY CORP
43521 Mayhugh Hill Rd.
Beallsville, OH 43716

Permit Number: D-1159
Application Number: R-1159-7

Telephone: (740) 926-9152

Effective: 12/09/2003
Expires: 01/25/2008

ARP Type:
Coal Waste Disposal

The issuance of this ARP means only that the application to conduct a coal mining operation meets the requirements of Chapter 1513 of the Revised Code, and as such DOES NOT RELIEVE the operator of any obligation to meet other federal, state or local requirements.

This ARP is issued in accordance with and subject to the provisions, conditions, and limitations of Chapter 1513 of the Revised Code and Chapters 1501:13-1, 1501:13-3 through 1501:13-14 of the Administrative Code.

The approved water monitoring plan for this ARP is:

Quality: N/A
Quantity: N/A

Note: Any previous condition(s) imposed on this permit, or subsequent adjacent areas, also apply to this ARP unless noted otherwise.

Signature:

A handwritten signature in black ink that reads "Michael J. Ponsler, R.W.O." followed by a stylized surname.

Date: 12/09/2003

Chief, Mineral Resources Management

**OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF MINES AND RECLAMATION**

APPLICATION TO REVISE A COAL MINING PERMIT

Note: Refer to the Division's "General Guidelines for Processing ARPs" and "Requirements for Specific Types of Common ARPs" for guidance on submitting and processing ARPs.

1. Applicant's Name American Energy Corporation

Address 43521 Mayhugh Hill Road

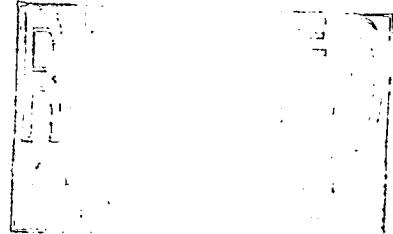
City Beallsville State Ohio Zip 43716

Telephone No. 740 - 926 - 9152

2. Permit No. D-1159

3. Section of mining and reclamation plan to be revised:

Part 3, Page 19, Item A(7)(a)



4. Describe in detail the proposed revision and submit any necessary drawings, plans, maps, etc.:

This revision is to show the approximate as-built location of the coal refuse placed in the #12 Pit on the east side of the overland conveyor.

5. Describe in detail the reason for requesting the revision:

To show the actual as built location of the coal refuse disposal in the #12 pit and to abate N.O.V. 24363.

6. Will this revision constitute a significant alteration from the mining and reclamation operations contemplated in the original permit? Yes, No.

(Note: refer to paragraph (E) (2) of 1501 : 13-4-06 of the Ohio Administrative Code to determine if a revision is deemed significant.)

If "yes", complete the following items 7 through 9.

OPERATOR

7. In the space below give the name and address of the newspaper in which the public notice is to be published.

8. In the space below give the text of the public notice that is to be published. (Include the information required by paragraph (A) (1) of 1501 : 13-05-01 of the Ohio Administrative Code.)

9. In the space below give the name and address of the public office where this application is to be filed for public viewing.

I, the undersigned, a responsible official of the applicant, do hereby verify the information contained in this revision request is true and correct to the best of my knowledge and belief.

Robert D. Moore
Print Name

RDB

June 12, 2003

Date



Signature

President

Title



BARA L. RUSH
NOTARY PUBLIC, STATE OF OHIO
COMMISSION EXPIRES 9-01-04

Barbara L. Rush
Notary Public

This request is hereby

APPROVED FOR DIVISION USE ONLY

Michael D. Spangler

Chief, Division of Mines and Reclamation

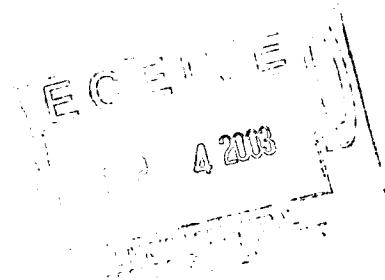
12-9-03
Date

ADDENDUM TO A.R.P., ITEM 4., AMERICAN ENERGY CORPORATION

American Energy Corporation obtained a permit to dispose of coal waste in an existing strip coal mine pit near Alledon, Ohio (D-1159). While conducting operations, spoil from the mining operations was utilized to create additional area to dispose of coal waste from American Energy Corporation's Century Mine (D-0425). Representatives of American Energy Corporation and Bennoc, Inc provided information shown herein.

The spoil fill was constructed as the area was being mined. The topsoil within the area of the spoil fill was stripped and stockpiled. All organic matter was either stored or removed. There were no springs or groundwater sources within the limits of the fill area, therefore no underdrains were installed. The spoil material was placed in two-foot lifts starting from the base of the fill upward. The fill was raised to the approximate elevation of the #12 coal seam. As the spoil fill was being raised, cover material was placed on the outslope on the downstream side of the fill, topsoil was then placed and was seeded and mulched. The top of the spoil fill was capped with low permeability material and sloped toward the downstream side of the fill to ensure temporary leachate control until final reclamation can take place. The leachate will be prevented from flowing over the fill face by a diversion ditch placed on the spoil fill. The bottom of the ditch was lined with a low permeability material. The leachate will flow into existing Pond 001 to be treated if necessary. Once final reclamation is authorized, the placement of the cover material completely over the coal refuse will minimize surface water, ground water and oxygen contact with the coal refuse thereby eliminating the formation of acid or toxic leachate. The underdrains within the fill area were installed according to the permit as shown in the approved A.R.P. R-1159-4, dated April 24, 2002. For locations of the underdrains, see the attached A.R.P. map.

The majority of the overland flow will be diverted into existing sediment control structures (Pond 001, Pond 002, DD1A, DD1B, DD2A, DD2B). Diversion Ditch 1B has been extended to cross the spoil fill area to drain into Pond 001. The area below the ditch is covered by a S.A.D.E., which was approved on June 7, 2003.



OPERATOR

ADDENDUM TO A.R.P., ITEM 4.
AMERICAN ENERGY CORPORATION

Hydrologic Concerns of Existing Refuse Disposal Area

The cover material utilized in this disposal area is of the same composition as that utilized at the D-0425-2 refuse disposal area. See D-0425-2, Engineers Report, Appendix 1, Attachment 28, Item 11.

The probable hydrologic consequences of the existing refuse disposal area will be negligible. The refuse is totally surrounded by low permeability material which will protect against infiltration of water into the refuse disposal area. A rock drain was provided wherever drainage was present in the highwall to collect and direct water to a pipe drain, and carry it away from the compacted disposal area liner. These precautions will protect against hydrologic impact from the refuse disposal in the #12 pit.

Quarterly monitoring at station D-10 currently exist in Piney Creek, downstream from the D-12 stream sample site. Although site D-12 is the closest downstream site to the existing refuse disposal area, it is extremely inaccessible. The only reasonable access to the D-12 site is from Piney Creek (this is due to very steep slopes above the D-12 site). Access from Piney Creek during high flow, or freezing conditions would be extremely dangerous, if not impossible.

OPERATOR

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REAME (ROTATIONAL EQUILIBRIUM ANALYSIS OF MULTILAYERED EMBANKMENTS), 32-bit V.
THIS 2000 VERSION (REAME2k) IS LICENSED BY CIVIL ENGINEERING SOFTWARE CENTER TO

Jack A. Hamilton & Associates, Inc.

INPUT FILE NAME -C:\REAMEDAT\AECSPOL.DAT

TITLE -AEC-#12 COAL REFUSE AREA

NO. OF STATIC AND SEISMIC CASES (NCASE) = 1

NO. OF NONCIRCULAR SLIP SURFACES (NSS) = 0

TWO-DIMENSIONAL ANALYSIS (THREED = 0)

CASE NO. 1 SEISMIC COEFFICIENT (SEIC) =0.000

NO. OF BOUNDARY LINES (NBL) = 6

NO. OF POINTS ON BOUNDARY LINE 1 = 10

1	X COORD.=-550	Y COORD.= 866.1
2	X COORD.= 160	Y COORD.= 968.4
3	X COORD.= 360.5	Y COORD.= 1008.5
4	X COORD.= 424.5	Y COORD.= 1025
5	X COORD.= 488.5	Y COORD.= 1030.9
6	X COORD.= 552.5	Y COORD.= 1042
7	X COORD.= 808.9	Y COORD.= 1062.4
8	X COORD.= 888.9	Y COORD.= 1072.4
9	X COORD.= 914.4	Y COORD.= 1074.2
10	X COORD.= 1426	Y COORD.= 1074.2

NO. OF POINTS ON BOUNDARY LINE 2 = 7

1	X COORD.= 158.8	Y COORD.= 988.2
2	X COORD.= 360.5	Y COORD.= 1028.5
3	X COORD.= 424.5	Y COORD.= 1045
4	X COORD.= 488.5	Y COORD.= 1050.9
5	X COORD.= 552.5	Y COORD.= 1062
6	X COORD.= 808.9	Y COORD.= 1082.4
7	X COORD.= 879.3	Y COORD.= 1091.2

NO. OF POINTS ON BOUNDARY LINE 3 = 4

1	X COORD.= 435.5	Y COORD.= 1079.2
2	X COORD.= 879.3	Y COORD.= 1091.2
3	X COORD.= 888.9	Y COORD.= 1092.4
4	X COORD.= 913.8	Y COORD.= 1094.2

NO. OF POINTS ON BOUNDARY LINE 4 = 4

1	X COORD.= 435.5	Y COORD.= 1079.2
2	X COORD.= 473.2	Y COORD.= 1082.3
3	X COORD.= 913.8	Y COORD.= 1094.2
4	X COORD.= 1426	Y COORD.= 1094.2

OPERATOR

AEC 10043

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NO. OF POINTS ON BOUNDARY LINE 5 = 6

1 X COORD.= 473.2	Y COORD.= 1082.3
2 X COORD.= 704.8	Y COORD.= 1125.8
3 X COORD.= 958.9	Y COORD.= 1155.2
4 X COORD.= 1118.9	Y COORD.= 1159.3
5 X COORD.= 1278.9	Y COORD.= 1158.4
6 X COORD.= 1426	Y COORD.= 1153.2

NO. OF POINTS ON BOUNDARY LINE 6 = 10

1 X COORD.=-550	Y COORD.= 886.1
2 X COORD.= 158.8	Y COORD.= 988.2
3 X COORD.= 270	Y COORD.= 1039
4 X COORD.= 371.5	Y COORD.= 1071.5
5 X COORD.= 435.5	Y COORD.= 1079.2
6 X COORD.= 704.8	Y COORD.= 1129.8
7 X COORD.= 958.9	Y COORD.= 1159.2
8 X COORD.= 1118.9	Y COORD.= 1163.3
9 X COORD.= 1278.9	Y COORD.= 1162.4
10 X COORD.= 1426	Y COORD.= 1157.2

LINE NO. AND SLOPE OF EACH SEGMENT ARE:

1	0.144	0.200	0.258	0.092	0.173	0.080
	0.125	0.071	0.000			
2	0.200	0.258	0.092	0.173	0.080	0.125
3	0.027	0.125	0.072			
4	0.082	0.027	0.000			
5	0.188	0.116	0.026	-0.006	-0.035	
6	0.144	0.457	0.320	0.120	0.188	0.116
	0.026	-0.006	-0.035			

MIN. DEPTH OF TALLEST SLICE (DMIN) = 0

NO. OF RADIUS CONTROL ZONES (NRCZ) = 1

RADIUS DECREMENT (RDEC) FOR ZONE 1 = 0

NO. OF CIRCLES (NCIR) FOR ZONE 1 = 5

ID NO. FOR FIRST CIRCLE (INFC) FOR ZONE 1 = 1

NO. OF BOTTOM LINES (NOL) FOR ZONE 1 = 4

LINE NO. (LINO) BEG. NO. (NBP) END NO. (NEP)

6	1	2
2	1	7
3	2	4
4	3	4

UNIT WEIGHT OF WATER (GW) = 62.4

SOIL NO.	COHESION	FRIC. ANGLE	UNIT WEIGHT
1	1400	32	109
2	400	30	110
3	500	30	107
4	0	30	113
5	500	30	107

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USE PHREATIC SURFACE

USE GRID

NO. OF SLICES (NSLI) = 10

NO. OF ADD. CIRCLES (NAC) = 3

ANALYSIS BY SIMPLIFIED BISHOP METHOD (MTHD=2)

NUMBER OF FORCES (NFO)= 0

SOFT SOIL NUMBER (SSN)= 0

NO. OF POINTS ON WATER TABLE (NPWT) = 12

1 X COORD.=-550	Y COORD.= 886.1
2 X COORD.= 158.8	Y COORD.= 988.2
3 X COORD.= 160	Y COORD.= 988.4
4 X COORD.= 360.5	Y COORD.= 1028.5
5 X COORD.= 424.5	Y COORD.= 1045
6 X COORD.= 488.5	Y COORD.= 1050.9
7 X COORD.= 552.5	Y COORD.= 1062
8 X COORD.= 808.9	Y COORD.= 1082.4
9 X COORD.= 879.3	Y COORD.= 1091.2
10 X COORD.= 888.9	Y COORD.= 1092.4
11 X COORD.= 913.8	Y COORD.= 1094.2
12 X COORD.= 1426	Y COORD.= 1094.2

NO. OF SOILS WITH DIFFERENT WATER TABLE (NSDW) = 0

NO. OF SOILS WITH DIFFERENT PORE PRESSURE RATIO (NSDP) = 0

INPUT COORD. OF GRID POINTS 1,2,AND 3

POINT 1 X COORD. = 125.9 Y COORD. = 2194.2

POINT 2 X COORD. = 125.9 Y COORD. = 1159.2

POINT 3 X COORD. = 953.9 Y COORD. = 1159.2

X INCREMENT (XINC) = 0 Y INCREMENT (YINC) = 0

NO. OF DIVISIONS BETWEEN POINTS 1 AND 2 (ND12) = 5

NO. OF DIVISIONS BETWEEN POINTS 2 AND 3 (ND23) = 4

ONLY A SUMMARY TABLE IS PRINTED (NPRT = 0)

SLICES WILL BE SUBDIVIDED

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FACTORS OF SAFETY BASED ON GRID

IN THE FOLLOWING TABLE WARNING INDICATES HOW MANY TIMES THE
MAXIMUM RADIUS IS LIMITED BY THE END POINTS OF GROUND LINES

CENTER COORDINATE	X COORDINATE	CENTER Y	NO. OF CIRCLE	TOTAL CRITIC. RADIUS	LOWEST F.S.	WARNING
125.9		2194.2	5	1 1187.357	3.075	0
125.9		1987.2	5	1 986.084	2.886	0
125.9		1780.2	5	1 783.096	2.696	0
125.9		1573.2	5	1 580.108	2.419	0
125.9		1366.2	5	1 377.120	2.329	0
125.9		1159.2	5	1 173.944	4.115	0
332.9		2194.2	5	1 1152.756	3.762	0
332.9		1987.2	5	1 946.642	3.716	0
332.9		1780.2	5	1 740.884	3.752	0
332.9		1573.2	5	1 536.084	3.799	0
332.9		1366.2	5	1 333.898	3.754	0
332.9		1159.2	11	7 129.636	3.699	0
539.9		2194.2	11	3 1108.619	3.980	0
539.9		1987.2	11	6 900.704	3.840	0
539.9		1780.2	11	6 695.665	3.665	0
539.9		1573.2	11	7 488.407	3.481	0
539.9		1366.2	17	14 281.440	3.479	0
539.9		1159.2	11	4 74.812	4.065	0
746.9		2194.2	11	9 1084.626	5.772	0
746.9		1987.2	11	10 876.191	5.461	0
746.9		1780.2	11	10 670.676	5.190	0
746.9		1573.2	11	8 473.679	5.020	0
746.9		1366.2	11	9 273.366	5.228	0
746.9		1159.2	8	5 35.788	7.978	0
953.9		2194.2	11	9 1083.697	11.572	0
953.9		1987.2	11	2 879.971	11.150	0
953.9		1780.2	11	7 666.477	10.633	0
953.9		1573.2	11	8 456.247	10.143	0
953.9		1366.2	11	10 239.530	10.012	0
953.9		1159.2	8	5 13.460	19.051	0

GRID IS EXPANDED AS FOLLOWS SO MINIMUM FACTOR OF SAFETY FALLS WITHIN THE GRID

-81.1		2194.2	5	1 1227.883	2.581	0
-81.1		1987.2	5	1 1022.998	2.994	0
-81.1		1780.2	1	1 818.113	1000.000	0
-81.1		1573.2	1	1 613.227	1000.000	0
-81.1		1366.2	1	1 408.342	1000.000	0
-81.1		1159.2	1	1 203.457	1000.000	0

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LOWEST FACTOR OF SAFETY AT EACH GRID POINT IS TABULATED BELOW

COORDINATE	-81.100	125.900	332.900	539.900	746.900	953.900
2194.200	2.581	3.075	3.762	3.980	5.772	11.572
1987.200	2.994	2.886	3.716	3.840	5.461	11.150
1780.200	1000.000	2.696	3.752	3.665	5.190	10.633
1573.200	1000.000	2.419	3.799	3.481	5.020	10.143
1366.200	1000.000	2.329	3.754	3.479	5.228	10.012
1159.200	1000.000	4.115	3.699	4.065	7.978	19.051

MINIMUM FACTORS OF SAFETY OCCUR AT THE FOLLOWING 4 CENTERS

FACTOR OF SAFETY = 2.581 AT (-81.100, 2194.200)

FACTOR OF SAFETY = 2.329 AT (125.900, 1366.200)

FACTOR OF SAFETY = 3.479 AT (539.900, 1366.200)

FACTOR OF SAFETY = 3.699 AT (332.900, 1159.200)

AT POINT (125.9 1366.2) RADIUS 377.120

THE MINIMUM FACTOR OF SAFETY IS 2.329

SUMMARY OF SLICE INFORMATION FOR MOST CRITICAL SLIP SURFACE

SL. NO.	SOIL NO.	SLICE WIDTH	SLICE HEIGHT	WATER HEIGHT	BOTTOM SINE	TOTAL WEIGHT	EFFEC. WEIGHT	RESIS. MOMENT	DRIVING MOMENT
1	2	18.880	3.202	0.000	.129	.665E+04	.665E+04	.431E+07	.324E+06
2	2	15.603	8.423	0.000	.175	.145E+05	.145E+05	.549E+07	.954E+06
3	2	0.155	10.536	0.000	.196	.180E+03	.180E+03	.623E+05	.133E+05
4	2	3.122	10.953	0.000	.200	.376E+04	.376E+04	.128E+07	.284E+06
5	2	18.880	13.558	0.000	.229	.282E+05	.282E+05	.889E+07	.244E+07
6	2	18.880	17.213	0.000	.280	.357E+05	.357E+05	.104E+08	.377E+07
7	2	18.880	19.800	0.000	.330	.411E+05	.411E+05	.115E+08	.511E+07
8	2	10.372	21.033	0.000	.368	.240E+05	.240E+05	.654E+07	.333E+07
9	2	8.508	20.876	0.000	.393	.195E+05	.195E+05	.531E+07	.290E+07
10	2	18.880	19.075	0.000	.430	.396E+05	.396E+05	.109E+08	.642E+07
11	2	18.880	15.476	0.000	.480	.321E+05	.321E+05	.939E+07	.582E+07
12	2	18.880	10.475	0.000	.530	.218E+05	.218E+05	.738E+07	.435E+07
13	2	18.880	3.920	0.000	.580	.814E+04	.814E+04	.494E+07	.178E+07
							SUM	.864E+08	.375E+08

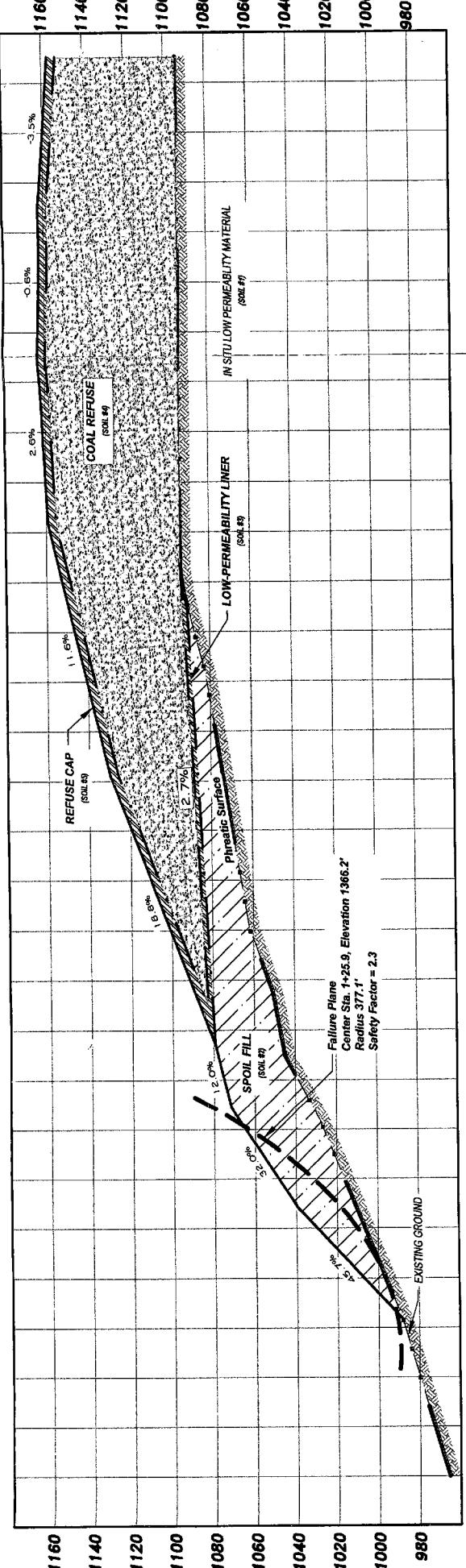
AT CENTER (125.900 , 1366.200) WITH RADIUS 377.120 AND SEIS. COEFF. 0.00

FACTOR OF SAFETY BY NORMAL METHOD IS 2.306

FACTOR OF SAFETY BY SIMPLIFIED BISHOP METHOD IS 2.329



9-3-03



Scale: 1" = 100' Horizontal
1" = 50' Vertical

0+00 1+00 2+00 3+00 4+00 5+00 6+00 7+00 8+00 9+00 10+00 11+00 12+00 13+00 14+00

AEC
OPERATOR

Addendum to A.R.P., Item 4

SLOPE STABILITY ANALYSIS

AMERICAN ENERGY CORPORATION, INC.

Refuse Disposal in the #12 Pit

County: BELMONT

Township/RANGE: T-6, R-5

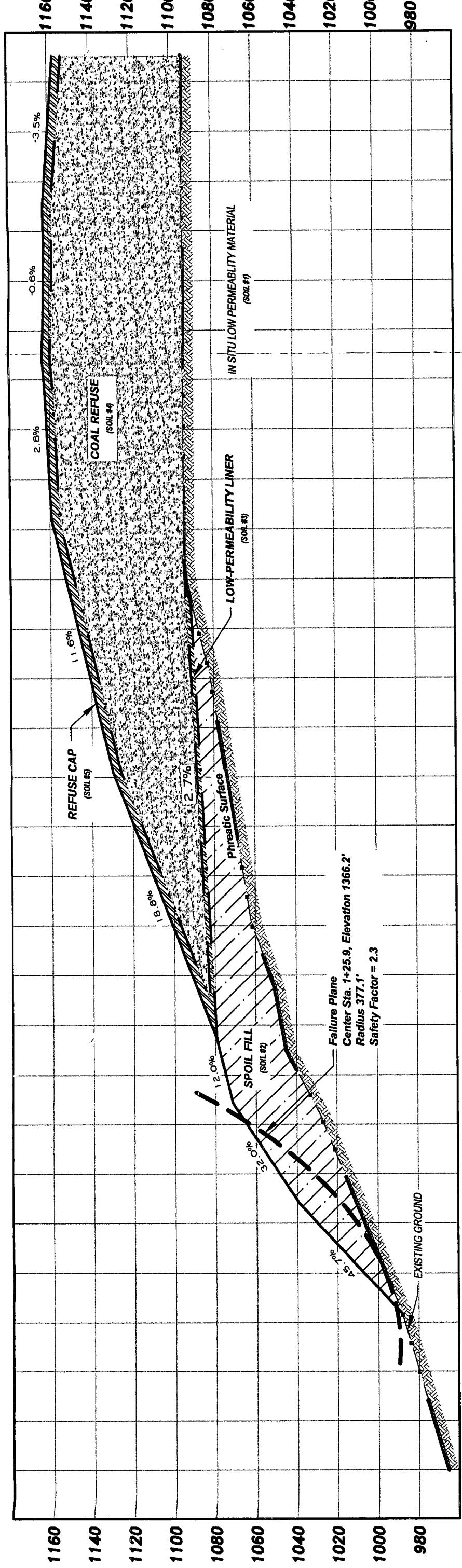
Date Revised: Comm #0201-22

342 High St., Box 471
Flushing, Ohio 43377
Ph: (740) 968-4247
Fax: (740) 968-4225
e-mail: hamilton@ls.net
www.hamiltonandassoc.com



I HEREBY CERTIFY THAT THIS SLOPE STABILITY ANALYSIS HAS BEEN PREPARED TO MEET THE APPLICABLE REQUIREMENTS OF RULE 1501 : 3-09-09 (A)(3)(b) OF THE ADMINISTRATIVE CODE.

DONALD M. BRAFFORD
REGISTERED ENGINEER
PROFESSIONAL ENGINEER
DONALD M. BRAFFORD
REGISTERED ENGINEER
PROFESSIONAL ENGINEER



SPOIL, FILL & COAL WASTE PROFILE H-H'

Scale: 1" = 100' Horizontal
1" = 50' Vertical

SOIL #1	Undisturbed Clay	Refuse Cap & Liner
Density	= 109 psf	= 107 psf
Cohesion	= 1400 psf	= 500 psf
Friction Angle	= 32°	= 30°
SOIL #2	Spoil Embankment	SOIL #4
Density	= 110 psf	= 113 psf
Cohesion	= 400 psf	= 0 psf
Friction Angle	= 30°	= 30°

OPERATOR
Addendum to A.R.P., Item 4

AMERICAN ENERGY CORPORATION, INC.

Refuse Disposal in the #12 Pit

Township: WAYNE County: BELMONT

Section: 3, 4 Township/Range: T-6, R-5

Date: 08/28/03 Date Revised: Comm #02001-22

342 High St., Box 471
Flushing, Ohio 43977
Ph: (740) 968-4947
Fax: (740) 968-4225
e-mail: hamilton@1st.net
www.hamiltonandassoc.com



I HEREBY CERTIFY THAT THIS SLOPE STABILITY ANALYSIS HAS BEEN PREPARED TO MEET THE APPLICABLE REQUIREMENTS OF RULE 1501 : 13-09-09 (A)(3)(b) OF THE ADMINISTRATIVE CODE.

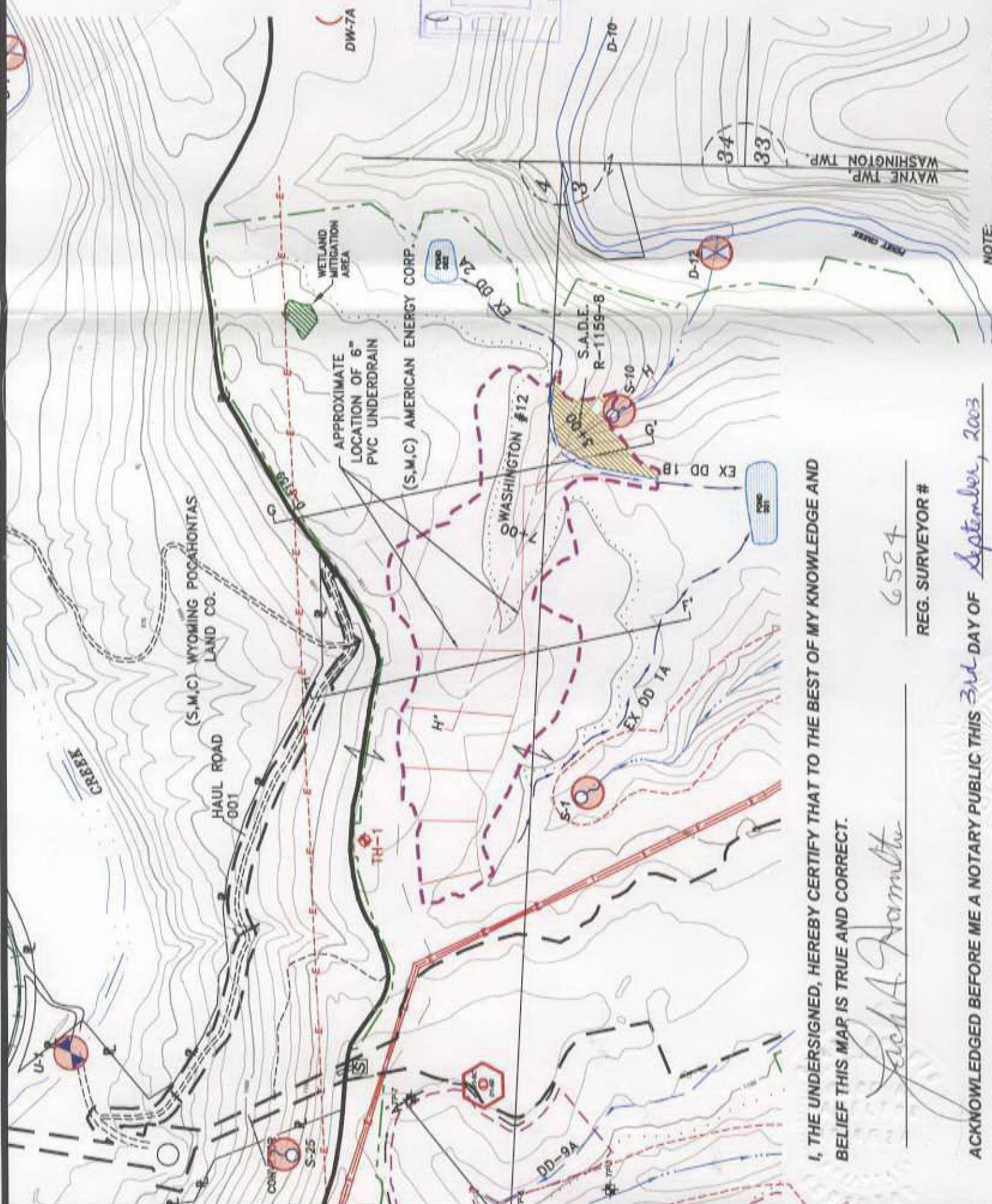
Donald M. Brafford
REGISTERED ENGINEER
DONALD M. BRAFFORD
E-29449
342 High St., Box 471
Flushing, Ohio 43977
Ph: (740) 968-4947
Fax: (740) 968-4225
e-mail: hamilton@1st.net
www.hamiltonandassoc.com

9.3.03

DATE

Donald M. Brafford
REGISTERED ENGINEER

OPERATOR



ADDENDUM TO A.R.P., ITEM 4

PERMIT D-1159

AMERICAN ENERGY CORPORATION
43521 MAYTHUGH HILL ROAD
BEALLSVILLE, OHIO 43716

PERMIT D-1159

PERMIT D-0425

REFUSE DISPOSAL AREA

WASHINGTON #12 COAL OUTCROP

SITUATED IN SECTIONS 3 AND 4, T-6 R-5,
WAYNE TOWNSHIP, BELMONT COUNTY, OHIO.

LOCATED ON THE USGS HUNTER QUADRANGLE.

SCALE: 1" = 400' CONTOUR INTERVAL: 20'
DATE PREPARED: JUNE 12, 2003
DATE REVISED: AUGUST 19, 2003

AEC 10050

OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF MINES AND RECLAMATION

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Address 43521 Mayhugh Hill Road

City Beallsville State Ohio Zip 43716

Telephone No. 740 - 926 - 9152

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Part 3, Page 19, Item A(7)(a)

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(Note: refer to paragraph (E) (2) of 1501 : 13-4-06 of the Ohio Administrative Code to determine if a revision is deemed significant.)

If "yes", complete the following items 7 through 9.

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I, the undersigned, a responsible official of the applicant, do hereby verify the information contained in this revision request is true and correct to the best of my knowledge and belief.

Robert D. Moore

Print Name



Signature

RLB

June 12, 2003

Date

President

Title

Sworn before me and subscribed in my presence this 12th day of June 2003.



BARA L. RUSH
NOTARY PUBLIC, STATE OF OHIO
COMMISSION EXPIRES 9-01-04

Barbara L. Rush

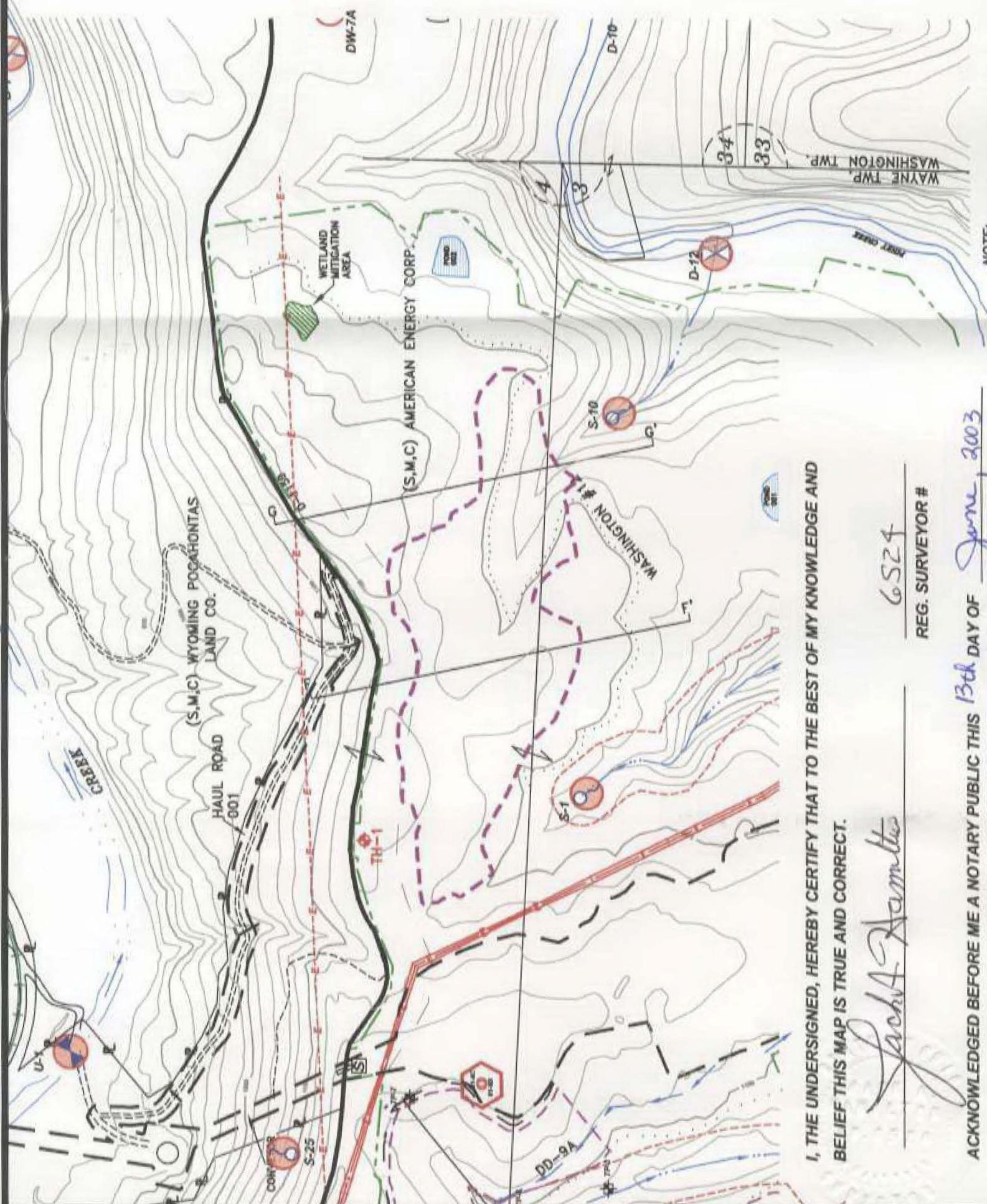
Notary Public

FOR DIVISION USE ONLY

This request is hereby _____

Chief, Division of Mines and Reclamation

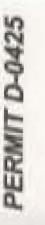
Date



ADDENDUM TO A.R.P., ITEM 4

PERMIT D-1159

AMERICAN ENERGY CORPORATION
43521 MAYHUGH HILL ROAD
BEALLSVILLE, OHIO 43716



REFUSE DISPOSAL AREA

WASHINGTON #12 COAL OUTCROP

DRAWING: SSUG:JOBS\02001-22\AS-BUILT-COB-ARP.dwg
SITUATED IN SECTIONS 3 AND 4, T-6 R-5,
WAYNE TOWNSHIP, BELMONT COUNTY, OHIO.
LOCATED ON THE USGS HUNTER QUADRANGLE.
SCALE: 1" = 400' CONTOUR INTERVAL: 20'
DATE PREPARED: JUNE 12, 2003

NOTE:
APPROXIMATE LOCATION AND CONFIGURATION OF
COAL WASTE IS BASED ON FIELD SURVEY AND
VERBAL STATEMENTS PROVIDED BY BENNOC, INC.
FIELD REPRESENTATIVES.

I, THE UNDERSIGNED, HEREBY CERTIFY THAT TO THE BEST OF MY KNOWLEDGE AND
BELIEF THIS MAP IS TRUE AND CORRECT.

Jacquie Hamlin

REG. SURVEYOR #
6524

ACKNOWLEDGED BEFORE ME A NOTARY PUBLIC THIS 13th DAY OF June, 2003

Ellen M. Green

NOTARY PUBLIC

ELLEN M. GREEN, Notary Public
State of Ohio
My Commission Expires September 23, 2006

ADDENDUM TO A.R.P., ITEM 4., AMERICAN ENERGY CORPORATION

American Energy Corporation obtained a permit to dispose of coal waste in an existing strip coal mine pit near Alledonia, Ohio (D-1159). While conducting operations, spoil from the mining operations was utilized to create additional area to dispose of coal waste from American Energy Corporation's Century Mine (D-0425). Representatives of American Energy Corporation and Bennoc, Inc provided information shown herein.

The spoil fill was constructed as the area was being mined. The topsoil within the area of the spoil fill was stripped and stockpiled. All organic matter was either stored or removed. There were no springs or groundwater sources within the limits of the fill area, therefore no underdrains were installed. The spoil material was placed in two-foot lifts starting from the base of the fill upward. The fill was raised to the approximate elevation of the #12 coal seam. As the spoil fill was being raised, cover material was placed on the outslope on the downstream side of the fill, topsoil was then placed and was seeded and mulched. The top of the spoil fill was capped with low permeability material and sloped toward the downstream side of the fill to ensure temporary leachate control until final reclamation can take place. The leachate will be prevented from flowing over the fill face by a diversion ditch placed on the spoil fill. The bottom of the ditch was lined with a low permeability material. The leachate will flow into existing Pond 001 to be treated if necessary. Once final reclamation is authorized, the placement of the cover material completely over the coal refuse will minimize surface water, ground water and oxygen contact with the coal refuse thereby eliminating the formation of acid or toxic leachate. The underdrains within the fill area were installed according to the permit as shown in the approved A.R.P. R-1159-4, dated April 24, 2002. For locations of the underdrains, see the attached A.R.P. map.

The majority of the overland flow will be diverted into existing sediment control structures (Pond 001, Pond 002, DD1A, DD1B, DD2A, DD2B). Diversion Ditch 1B has been extended to cross the spoil fill area to drain into Pond 001. The area below the ditch is covered by a S.A.D.E., which was approved on June 7, 2003.

REAME (ROTATIONAL EQUILIBRIUM ANALYSIS OF MULTILAYERED EMBANKMENTS), 32-bit V.
THIS 2000 VERSION (REAME2k) IS LICENSED BY CIVIL ENGINEERING SOFTWARE CENTER TO

Jack A. Hamilton & Associates, Inc.

INPUT FILE NAME -C:\REAMEDAT\AECSPOL.DAT

TITLE -AEC-#12 COAL REFUSE AREA

NO. OF STATIC AND SEISMIC CASES (NCASE) = 1

NO. OF NONCIRCULAR SLIP SURFACES (NSS) = 0

TWO-DIMENSIONAL ANALYSIS (THREED = 0)

CASE NO. 1 SEISMIC COEFFICIENT (SEIC) =0.000

NO. OF BOUNDARY LINES (NBL) = 6

NO. OF POINTS ON BOUNDARY LINE 1 = 10

1	X COORD.=-550	Y COORD.= 866.1
2	X COORD.= 160	Y COORD.= 968.4
3	X COORD.= 360.5	Y COORD.= 1008.5
4	X COORD.= 424.5	Y COORD.= 1025
5	X COORD.= 488.5	Y COORD.= 1030.9
6	X COORD.= 552.5	Y COORD.= 1042
7	X COORD.= 808.9	Y COORD.= 1062.4
8	X COORD.= 888.9	Y COORD.= 1072.4
9	X COORD.= 914.4	Y COORD.= 1074.2
10	X COORD.= 1426	Y COORD.= 1074.2

NO. OF POINTS ON BOUNDARY LINE 2 = 7

1	X COORD.= 158.8	Y COORD.= 988.2
2	X COORD.= 360.5	Y COORD.= 1028.5
3	X COORD.= 424.5	Y COORD.= 1045
4	X COORD.= 488.5	Y COORD.= 1050.9
5	X COORD.= 552.5	Y COORD.= 1062
6	X COORD.= 808.9	Y COORD.= 1082.4
7	X COORD.= 879.3	Y COORD.= 1091.2

NO. OF POINTS ON BOUNDARY LINE 3 = 4

1	X COORD.= 435.5	Y COORD.= 1079.2
2	X COORD.= 879.3	Y COORD.= 1091.2
3	X COORD.= 888.9	Y COORD.= 1092.4
4	X COORD.= 913.8	Y COORD.= 1094.2

NO. OF POINTS ON BOUNDARY LINE 4 = 4

1	X COORD.= 435.5	Y COORD.= 1079.2
2	X COORD.= 473.2	Y COORD.= 1082.3
3	X COORD.= 913.8	Y COORD.= 1094.2
4	X COORD.= 1426	Y COORD.= 1094.2

NO. OF POINTS ON BOUNDARY LINE 5 = 6

1	X COORD.= 473.2	Y COORD.= 1082.3
2	X COORD.= 704.8	Y COORD.= 1125.8
3	X COORD.= 958.9	Y COORD.= 1155.2
4	X COORD.= 1118.9	Y COORD.= 1159.3
5	X COORD.= 1278.9	Y COORD.= 1158.4
6	X COORD.= 1426	Y COORD.= 1153.2

NO. OF POINTS ON BOUNDARY LINE 6 = 10

1	X COORD.=-550	Y COORD.= 886.1
2	X COORD.= 158.8	Y COORD.= 988.2
3	X COORD.= 270	Y COORD.= 1039
4	X COORD.= 371.5	Y COORD.= 1071.5
5	X COORD.= 435.5	Y COORD.= 1079.2
6	X COORD.= 704.8	Y COORD.= 1129.8
7	X COORD.= 958.9	Y COORD.= 1159.2
8	X COORD.= 1118.9	Y COORD.= 1163.3
9	X COORD.= 1278.9	Y COORD.= 1162.4
10	X COORD.= 1426	Y COORD.= 1157.2

LINE NO. AND SLOPE OF EACH SEGMENT ARE:

1	0.144	0.200	0.258	0.092	0.173	0.080
	0.125	0.071	0.000			
2	0.200	0.258	0.092	0.173	0.080	0.125
3	0.027	0.125	0.072			
4	0.082	0.027	0.000			
5	0.188	0.116	0.026	-0.006	-0.035	
6	0.144	0.457	0.320	0.120	0.188	0.116
	0.026	-0.006	-0.035			

MIN. DEPTH OF TALLEST SLICE (DMIN) = 0
NO. OF RADIUS CONTROL ZONES (NRCZ) = 1

RADIUS DECREMENT (RDEC) FOR ZONE 1 = 0
NO. OF CIRCLES (NCIR) FOR ZONE 1 = 5
ID NO. FOR FIRST CIRCLE (INFC) FOR ZONE 1 = 1
NO. OF BOTTOM LINES (NOL) FOR ZONE 1 = 4
LINE NO. (LINO) BEG. NO. (NBP) END NO. (NEP)

6	1	2
2	1	7
3	2	4
4	3	4

UNIT WEIGHT OF WATER (GW) = 62.4

SOIL NO.	COHESION	FRIC. ANGLE	UNIT WEIGHT
1	1400	32	109
2	400	30	110
3	500	30	107
4	0	30	113
5	500	30	107

USE PHREATIC SURFACE

USE GRID

NO. OF SLICES (NSLI) = 10

NO. OF ADD. CIRCLES (NAC) = 3

ANALYSIS BY SIMPLIFIED BISHOP METHOD (MTHD=2)

NUMBER OF FORCES (NFO)= 0

SOFT SOIL NUMBER (SSN)= 0

NO. OF POINTS ON WATER TABLE (NPWT) = 12

1 X COORD.=-550	Y COORD.= 886.1
2 X COORD.= 158.8	Y COORD.= 988.2
3 X COORD.= 160	Y COORD.= 988.4
4 X COORD.= 360.5	Y COORD.= 1028.5
5 X COORD.= 424.5	Y COORD.= 1045
6 X COORD.= 488.5	Y COORD.= 1050.9
7 X COORD.= 552.5	Y COORD.= 1062
8 X COORD.= 808.9	Y COORD.= 1082.4
9 X COORD.= 879.3	Y COORD.= 1091.2
10 X COORD.= 888.9	Y COORD.= 1092.4
11 X COORD.= 913.8	Y COORD.= 1094.2
12 X COORD.= 1426	Y COORD.= 1094.2

NO. OF SOILS WITH DIFFERENT WATER TABLE (NSDW) = 0

NO. OF SOILS WITH DIFFERENT PORE PRESSURE RATIO (NSDP) = 0

INPUT COORD. OF GRID POINTS 1,2, AND 3

POINT 1 X COORD. = 125.9 Y COORD. = 2194.2

POINT 2 X COORD. = 125.9 Y COORD. = 1159.2

POINT 3 X COORD. = 953.9 Y COORD. = 1159.2

X INCREMENT (XINC) = 0 Y INCREMENT (YINC) = 0

NO. OF DIVISIONS BETWEEN POINTS 1 AND 2 (ND12) = 5

NO. OF DIVISIONS BETWEEN POINTS 2 AND 3 (ND23) = 4

ONLY A SUMMARY TABLE IS PRINTED (NPRT = 0)

SLICES WILL BE SUBDIVIDED

FACTORS OF SAFETY BASED ON GRID

IN THE FOLLOWING TABLE WARNING INDICATES HOW MANY TIMES THE MAXIMUM RADIUS IS LIMITED BY THE END POINTS OF GROUND LINES

CENTER COORDINATE	X COORDINATE	CENTER Y	NO. OF CIRCLE	TOTAL CRITIC. RADIUS	LOWEST F.S.	WARNING
125.9		2194.2	5	1 1187.357	3.075	0
125.9		1987.2	5	1 986.084	2.886	0
125.9		1780.2	5	1 783.096	2.696	0
125.9		1573.2	5	1 580.108	2.419	0
125.9		1366.2	5	1 377.120	2.329	0
125.9		1159.2	5	1 173.944	4.115	0
332.9		2194.2	5	1 1152.756	3.762	0
332.9		1987.2	5	1 946.642	3.716	0
332.9		1780.2	5	1 740.884	3.752	0
332.9		1573.2	5	1 536.084	3.799	0
332.9		1366.2	5	1 333.898	3.754	0
332.9		1159.2	11	7 129.636	3.699	0
539.9		2194.2	11	3 1108.619	3.980	0
539.9		1987.2	11	6 900.704	3.840	0
539.9		1780.2	11	6 695.665	3.665	0
539.9		1573.2	11	7 488.407	3.481	0
539.9		1366.2	17	14 281.440	3.479	0
539.9		1159.2	11	4 74.812	4.065	0
746.9		2194.2	11	9 1084.626	5.772	0
746.9		1987.2	11	10 876.191	5.461	0
746.9		1780.2	11	10 670.676	5.190	0
746.9		1573.2	11	8 473.679	5.020	0
746.9		1366.2	11	9 273.366	5.228	0
746.9		1159.2	8	5 35.788	7.978	0
953.9		2194.2	11	9 1083.697	11.572	0
953.9		1987.2	11	2 879.971	11.150	0
953.9		1780.2	11	7 666.477	10.633	0
953.9		1573.2	11	8 456.247	10.143	0
953.9		1366.2	11	10 239.530	10.012	0
953.9		1159.2	8	5 13.460	19.051	0

GRID IS EXPANDED AS FOLLOWS SO MINIMUM FACTOR OF SAFETY FALLS WITHIN THE GRID

-81.1	2194.2	5	1	1227.883	2.581	0
-81.1	1987.2	5	1	1022.998	2.994	0
-81.1	1780.2	1	1	818.113	1000.000	0
-81.1	1573.2	1	1	613.227	1000.000	0
-81.1	1366.2	1	1	408.342	1000.000	0
-81.1	1159.2	1	1	203.457	1000.000	0

LOWEST FACTOR OF SAFETY AT EACH GRID POINT IS TABULATED BELOW

COORDINATE	-81.100	125.900	332.900	539.900	746.900	953.900
2194.200	2.581	3.075	3.762	3.980	5.772	11.572
1987.200	2.994	2.886	3.716	3.840	5.461	11.150
1780.200	1000.000	2.696	3.752	3.665	5.190	10.633
1573.200	1000.000	2.419	3.799	3.481	5.020	10.143
1366.200	1000.000	2.329	3.754	3.479	5.228	10.012
1159.200	1000.000	4.115	3.699	4.065	7.978	19.051

MINIMUM FACTORS OF SAFETY OCCUR AT THE FOLLOWING 4 CENTERS

FACTOR OF SAFETY = 2.581 AT (-81.100, 2194.200)

FACTOR OF SAFETY = 2.329 AT (125.900, 1366.200)

FACTOR OF SAFETY = 3.479 AT (539.900, 1366.200)

FACTOR OF SAFETY = 3.699 AT (332.900, 1159.200)

AT POINT (125.9 1366.2) RADIUS 377.120

THE MINIMUM FACTOR OF SAFETY IS 2.329

SUMMARY OF SLICE INFORMATION FOR MOST CRITICAL SLIP SURFACE

SL. NO.	SOIL NO.	SLICE WIDTH	SLICE HEIGHT	WATER HEIGHT	BOTTOM SINE	TOTAL WEIGHT	EFFEC. WEIGHT	RESIS. MOMENT	DRIVING MOMENT
1	2	18.880	3.202	0.000	.129	.665E+04	.665E+04	.431E+07	.324E+06
2	2	15.603	8.423	0.000	.175	.145E+05	.145E+05	.549E+07	.954E+06
3	2	0.155	10.536	0.000	.196	.180E+03	.180E+03	.623E+05	.133E+05
4	2	3.122	10.953	0.000	.200	.376E+04	.376E+04	.128E+07	.284E+06
5	2	18.880	13.558	0.000	.229	.282E+05	.282E+05	.889E+07	.244E+07
6	2	18.880	17.213	0.000	.280	.357E+05	.357E+05	.104E+08	.377E+07
7	2	18.880	19.800	0.000	.330	.411E+05	.411E+05	.115E+08	.511E+07
8	2	10.372	21.033	0.000	.368	.240E+05	.240E+05	.654E+07	.333E+07
9	2	8.508	20.876	0.000	.393	.195E+05	.195E+05	.531E+07	.290E+07
10	2	18.880	19.075	0.000	.430	.396E+05	.396E+05	.109E+08	.642E+07
11	2	18.880	15.476	0.000	.480	.321E+05	.321E+05	.939E+07	.582E+07
12	2	18.880	10.475	0.000	.530	.218E+05	.218E+05	.738E+07	.435E+07
13	2	18.880	3.920	0.000	.580	.814E+04	.814E+04	.494E+07	.178E+07
							SUM	.864E+08	.375E+08

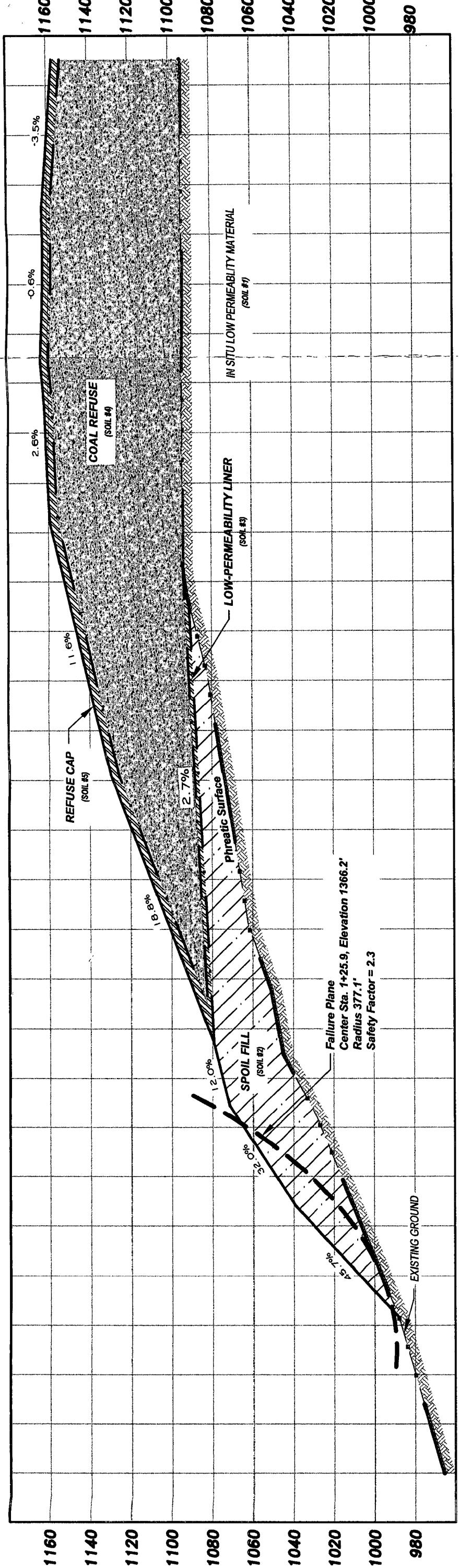
AT CENTER (125.900 , 1366.200) WITH RADIUS 377.120 AND SEIS. COEFF. 0.00

FACTOR OF SAFETY BY NORMAL METHOD IS 2.306

FACTOR OF SAFETY BY SIMPLIFIED BISHOP METHOD IS 2.329



9-3-03

**14+00****10+00****9+00****8+00****7+00****6+00****5+00****4+00****3+00****2+00****1+00****0+00**

SLOPE STABILITY ANALYSIS
Addendum to A.R.P., Item 4

AMERICAN ENERGY CORPORATION, INC.

Refuse Disposal in the #12 Pit

Township: WAYNE

County: BELMONT

Section: 3, 4

Township/Range: T-6, R-5

Date: 08/28/03

Date Revised:

Comm: #02001-22

9.3.03

DATE

REGISTERED ENGINEER

DONALD M. BRAFFORD
E-29449
342 High St., Box 471
Flushing, Ohio 43977
Ph: (740) 968-4947
Fax: (740) 968-4225
e-mail: hamilton@1st.net
www.hamiltonandassoc.com

I HEREBY CERTIFY THAT THIS SLOPE STABILITY ANALYSIS HAS BEEN PREPARED TO MEET THE
APPLICABLE REQUIREMENTS OF RULE 1501: 13-09-09 (A)(3)(b) OF THE ADMINISTRATIVE CODE.

